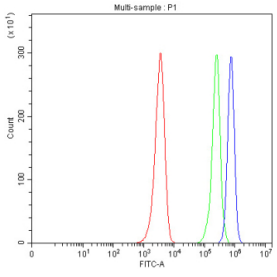
Adipophilin Antibody / ADRP / Perilipin 2 / PLIN2 (R32551)

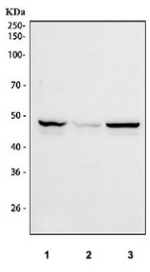
Catalog No.	Formulation	Size
R32551	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q99541
Localization	Cytoplasmic
Applications	Western Blot : 0.5-1ug/ml Flow Cytometry : 1-3ug/million cells
Limitations	This Adipophilin antibody is available for research use only.



Flow cytometry analysis of fixed and permeabilized human HEL cells with Adipophilin antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= Adipophilin antibody.



Western blot testing of 1) human HepG2, 2) human K562 and 3) human JAR cell lysate with Adipophilin antibody. Predicted molecular weight ~48 kDa.

Description

Adipophilin antibody targets Adipophilin, also known as ADRP, encoded by the PLIN2 gene. Adipophilin is a member of the perilipin family of lipid droplet-associated proteins and plays a central role in the formation, stabilization, and regulation of intracellular lipid droplets. It is predominantly localized to the surface of lipid droplets in the cytoplasm, where it associates with neutral lipids such as triglycerides and cholesteryl esters. Adipophilin is widely expressed in both adipose and non-adipose tissues and is particularly prominent in cells that actively store or metabolize lipids.

Functionally, Adipophilin regulates lipid droplet dynamics by controlling lipid accumulation, droplet growth, and interactions with metabolic enzymes. Unlike some other perilipin family members that are restricted to adipocytes, Adipophilin is expressed in a broad range of cell types, including epithelial cells, macrophages, hepatocytes, and steroidogenic cells. Its expression is rapidly induced under conditions of lipid loading, oxidative stress, and cellular differentiation, making it a sensitive marker of intracellular lipid storage. An Adipophilin antibody supports studies focused on lipid metabolism and lipid droplet biology.

Adipophilin expression is tightly linked to cellular metabolic state. In macrophages, it is associated with foam cell formation during lipid uptake, while in hepatocytes it reflects hepatic lipid accumulation. In epithelial tissues, Adipophilin expression can highlight altered lipid metabolism associated with differentiation or pathological states. Its broad expression pattern and inducibility underscore its role as a key mediator of lipid homeostasis across diverse tissues.

From a disease-relevance perspective, Adipophilin has been extensively studied as a marker of metabolic dysregulation and lipid accumulation in disease. Elevated Adipophilin expression has been reported in fatty liver disease, atherosclerosis, and metabolic syndrome. It is also widely used as a diagnostic and research marker in oncology, where increased lipid droplet formation is a feature of several tumor types, including renal cell carcinoma, breast cancer, and hepatocellular carcinoma. In these contexts, Adipophilin expression reflects metabolic reprogramming and altered lipid utilization in cancer cells.

At the molecular level, Adipophilin is a cytoplasmic protein that associates peripherally with lipid droplet membranes rather than spanning lipid bilayers. Post-translational modifications and lipid droplet association can influence its apparent migration on SDS-PAGE without indicating changes in primary sequence. An Adipophilin antibody supports research applications focused on lipid storage, metabolic disease, and disease-associated changes in cellular lipid handling, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

Differences in protocols and secondary/substrate sensitivity may require the Adipophilin antibody to be titrated for optimal performance.

Immunogen

Amino acids K226-Q418 from the human protein were used as the immunogen for the Adipophilin antibody.

Storage

After reconstitution, the Adipophilin antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.